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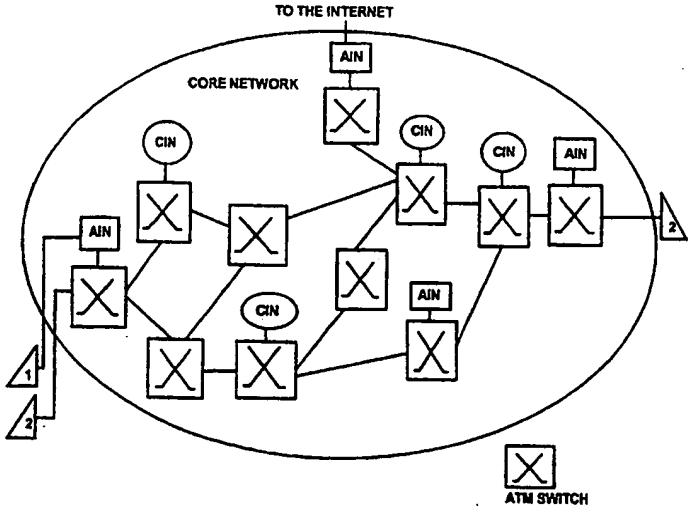

(57) Abstract

The invention provides an IP/ATM network including an ATM transmission system, adapted for the transmission of IP data and including a core network of ATM switches. The ATM transmission system is adapted to handle inter-subnet commnunications and the core network includes access IP/ATM nodes (AINs) and core IP/ATM nodes (CINs) for handling said inter-subnet communications. Each AIN is attached to an ATM switch of the core network through an ATM User-Network Interface (UNI) and is adapted to perform IP data flow classification and labelling for facilitating mapping of IP data flows to ATM VCs, and to communicate with IP/ATM hosts and routers. Each CIN is attached to an ATM switch of the core network through an ATM UNI and is adapted to perform routing and labelling. The AINs and CINs are interconnected through Virtual Path Connections (VCPs), and permanent VCPs are set-up between adjacent CINs. The AINs are adapted to communicate with non-ATM hosts using, for example, Ethernet. The inter-subnet communications are effected on a hop-by-hop basis, and the ATM transmission system is adapted to map each IP data flow into an ATM Virtual Circuit (VC) for each hop, between nodes, on the communication path towards a destination subset.

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